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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Shusaku Takagi

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FRISHAUF, HOLTZ, GOODMAN & CHICK, PC
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EXAMINER

FOGARTY, CAITLIN ANNE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

08/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/553,898	Applicant(s) TAKAGI ET AL.	
	Examiner CAITLIN FOGARTY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 24, 2010 has been entered.

Status of Claims

2. Claims 1 – 8 are pending where claims 1, 2, and 5 – 8 have been amended.

Status of Previous Rejections

3. The 35 U.S.C. 103(a) rejection of claims 1 – 8 as being unpatentable over WO 01/09396 has been withdrawn in view of the amended claims filed February 5, 2010.

Priority

4. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US 2003/0047256 (hereinafter US '256).

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With respect to amended instant claim 1, [0001] and [0045]-[0049] of US '256 disclose a high tensile cold rolled steel sheet with an overlapping composition as seen in the table below.

Element	Claims 1 & 5 (mass %)	US '256 (mass %)	Overlapping Range (mass %)
C	0.04 – 0.13	≤ 0.15	0.04 – 0.13
Si	0.3 – 1.2	0.05 – 1.5	0.3 – 1.2
Mn	1.0 – 3.5	≤ 3.0	1.0 – 3.0
P	≤ 0.04	0.03 – 0.15	0.03 – 0.04
S	≤ 0.01	≤ 0.02	≤ 0.01
Al	0.02 – 0.07	≤ 0.02	0.02
N	≤ 0.005	0.0050 – 0.0250	0.005
Cr	≤ 0.2	0.05 – 1.0	0.05 – 0.2
Fe + Impurities	Balance	Balance	Balance

The steel sheet of US '256 satisfies the claim limitation “consisting essentially of” because it does not require any additional elements that are not recited in the instant claims. US '256 also teaches in [0045], [0108], and [0109] that the steel sheet has a microstructure of a ferritic phase with an area ratio of 50% or more and a martensitic phase at an area ratio of 3% or more which overlaps with the instant claimed ranges of ferrite and martensite.

US '256 differs from instant claim 1 because it does not specifically teach the ratio of intervals of the martensite in the rolling direction to those in the sheet thickness direction or the nano strength of the martensite. However, since the cold rolled sheet of US '256 has an overlapping composition with the composition recited in instant claim 1 and the steel sheet of US '256 is made using essentially the same process as the instant invention as discussed below for instant claim 5, one of ordinary skill in the art would have expected the steel sheet of US '256 to inherently have a similar ratio and nano strength of martensite. See MPEP 2112 IV and V.

In regards to instant claim 2, [0045]-[0049] of US '256 teach that the steel sheet may further comprise 0.05-1.0% Mo, 0.05-1.5% Ni, or 0.0003-0.01% B which overlap with the compositional ranges of Mo, Ni, and B recited in the instant claim.

Regarding instant claims 3 and 4, [0045]-[0049] of US '256 disclose that the steel sheet may additionally comprise 0.01-0.2% Ti or 0.01-0.1% Nb which both overlap with the compositional ranges of Ti and Nb recited in the instant claims.

With respect to instant claim 5, [0045]-[0055], [0141], [0142], [0146], [0145], [0147]-[0149], and [0158]-[0161] of US '256 teach a method for manufacturing a high tensile cold rolled steel sheet. The method includes hot rolling a steel slab with an overlapping composition with the steel recited in instant claim 5, as discussed above for instant claim 1, into a steel sheet. Then, the sheet is coiled at a coiling temperature of 750°C or below which overlaps with the claimed coiling temperature. Next, cold rolling is performed on the coiled steel sheet at a cold rolling reduction of 40% or more which overlaps with the instant claimed range. Then, the cold rolled sheet is annealed at a temperature between 700°C and 900°C. Finally, the annealed sheet is cooled to 300-600°C at a cooling rate of 5°C/s or above which overlaps with the claimed cooling temperature and cooling rate. US '256 also teaches in [0045], [0108], and [0109] that the steel sheet has a microstructure of a ferritic phase with an area ratio of 50% or more and a martensitic phase at an area ratio of 3% or more which overlaps with the instant claimed ranges of ferrite and martensite. The steel sheet of US '256 satisfies the claim limitation "consisting essentially of" because it does not require any additional elements that are not recited in the instant claims.

US '256 differs from instant claim 5 because it does not teach the formula of the annealing temperature range recited in claim 5. However, the annealing temperature range of 700°C-900°C disclosed by US '256 overlaps with the specific examples of annealing temperature ranges recited in Table 2-2 of the instant application. Therefore, in the absence of factual evidence demonstrating the criticality of the annealing temperature formula, US '256 teaches annealing temperatures that satisfy the formula recited in claim 5. US '256 also differs from instant claim 5 because it does not specifically teach the ratio of intervals of the martensite in the rolling direction to those in the sheet thickness direction or the nano strength of the martensite. However, since the cold rolled sheet of US '256 has an overlapping composition with the composition recited in instant claim 5 and the steel sheet of US '256 is made using essentially the same process as the instant invention as discussed below for instant claim 5, one of ordinary skill in the art would have expected the steel sheet of US '256 to inherently have a similar ratio and nano strength of martensite. See MPEP 2112 IV and V.

In regards to instant claim 6, [0045]-[0049] of US '256 teach that the steel sheet may further comprise 0.05-1.0% Mo, 0.05-1.5% Ni, or 0.0003-0.01% B which overlap with the compositional ranges of Mo, Ni, and B recited in the instant claim.

Regarding instant claims 7 and 8, [0045]-[0049] of US '256 disclose that the steel sheet may additionally comprise 0.01-0.2% Ti or 0.01-0.1% Nb which both overlap with the compositional ranges of Ti and Nb recited in the instant claims.

Since the claimed temperature and compositional ranges of claims 1 – 8 either overlap or are within the ranges disclosed by US '256, a prima facie case of

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obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed temperature ranges and steel sheet composition from the temperature ranges and steel sheet composition disclosed by US '256 because US '256 teaches the same utility (i.e. lightweight structural materials) in the whole disclosed range.

Response to Arguments

7. Applicant's arguments with respect to claims 1 – 8 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF